What is claimed is:

1. A X-ray image radiographing method of detecting a X-ray image passing an object irradiated with X-ray emitted from a X-ray tube by a X-ray detector, comprising:

a step of increasing a sharpness of an image lowered due to penumbra by enhancing an edge of the image with refraction contrast enhancement.

2. A X-ray image radiographing method, comprising steps of:

using a X-ray tube having a size D of focal spot of 30 μm or more;

setting a distance R1 between the X-ray tube and an object so as to be within a range defined by the following formula:

$$R1 \geq (D-7)/200 \text{ (m)};$$

setting a distance R2 between the object and a X-ray detector so as to be not smaller than 0.15 (m).

3. The X-ray image radiographing method of claim 2, wherein the distance R1 between the X-ray tube and the object is set to be within a range defined by the following formula:

$$10 > R1 \geq (D-7)/200 \text{ (m)}.$$

4. The X-ray image radiographing method of claim 2, wherein the size of focal spot is 30 μm to 1000 μm.

5. The X-ray image radiographing method of claim 2, wherein the size of focal spot is 50 μm to 500 μm.

6. The X-ray image radiographing method of claim 2, wherein the energy of X-ray in a line spectrum is 10 keV to 60 keV.

7. The X-ray image radiographing method of claim 2, wherein an anode of the X-ray tube contains molybdenum or rhodium.

8. The X-ray image radiographing method of claim 2, wherein a screen/film system having an image contrast $\bar{G}$ of 1.5 to 3.6 is used.

9. The X-ray image radiographing method of claim 2, wherein a screen/film system having an image contrast $\bar{G}$ of 1.5 to 4.0 is used.

10. The X-ray image radiographing method of claim 2, wherein a digital X-ray detector having a size of a pixel of 1 μm to 200 μm is used.

11. The X-ray image radiographing method of claim 10, wherein an enhanced boundary portion of the object is detected from the obtained image data and a width of the boundary portion and/or image contrast is further enhanced.

12. The X-ray image radiographing method of claim 2, wherein the object is a human body or a specimen sampled from a human body.

13. The X-ray image radiographing method of claim 2, wherein the object is a breast or a specimen sampled from the breast.

Sub. A2

14. A X-ray image radiographing apparatus, comprising:

a X-ray tube having a size of focal spot of 30 μm or more;

a fixing means for fixing a position of an object to be radiographed; and

a X-ray detector to detect a X-ray image passing through the object;

wherein the fixing means is able to set such that a distance R1 between the X-ray tube and the position of the object fixed by the fixing means so as to be within a range defined by the following formula:

$$R1 \geq (D-7)/200 \text{ (m)}; \text{ and}$$

a distance R2 between the position of the object fixed by the fixing means and a X-ray detector so as to be not smaller than 0.15 (m).

15. The X-ray image radiographing apparatus of claim 14, wherein the distance R1 between the X-ray tube and the position of the object fixed by the fixing means is settable within a range defined by the following formula:

$$10 > R1 \geq (D-7)/200 \text{ (m)}$$

16. The X-ray image radiographing apparatus of claim 14, wherein the size of focal spot is 30 μm to 1000 μm.

17. The X-ray image radiographing apparatus of claim 14, wherein the size of focal spot is 50 μm to 500 μm.

18. The X-ray image radiographing apparatus of claim 14, wherein energy of X-ray in a line spectrum is 10 keV to 60 keV.

19. The X-ray image radiographing apparatus of claim 14, wherein an anode of the X-ray tube contains molybdenum or rhodium.

20. The X-ray image radiographing apparatus of claim 14, wherein a screen/film system having an image contrast $\bar{G}$ of 1.5 to 3.6 is used.

21. The X-ray image radiographing apparatus of claim 14, wherein a screen/film system having an image contrast $\bar{G}$ of 1.5 to 4.0 is used.

22. The X-ray image radiographing apparatus of claim 14, wherein a digital X-ray detector having a size of a pixel of 1 μm to 200 μm is used.

23. The X-ray image radiographing apparatus of claim 22, wherein an enhanced boundary portion of the object is detected from the obtained image data and a width of the boundary portion and/or image contrast is further enhanced.

24. The X-ray image radiographing apparatus of claim 14, wherein the object is a human body or a specimen sampled from a human body.

25. The X-ray image radiographing apparatus of claim 14, wherein the object is a breast or a specimen sampled from the breast.